ガラスレンズ用プレス品硝種
Glass Lens Pressed Blanks

ガラス研磨レンズ用硝種
Glass Polished Lens

推奨硝種
Recommended Glass Type

FDS24-SW

921-240

n_d = 1.92119　ν_d = 23.96 (23.956)　$n_F - n_C$ = 0.038453
n_e = 1.93024　ν_e = 23.77 (23.766)　$n_{F'} - n_{C'}$ = 0.039142

屈折率 Refractive Index		
	λ (nm)	
$n_{1529.6}$	1529.60	1.87097
$n_{1128.64}$	1128.64	1.88084
n_t	1013.98	1.88482
n_s	852.11	1.89264
$n_{A'}$	768.195	1.89854
n_r	706.519	1.90425
n_C	656.273	1.91020
$n_{C'}$	643.847	1.91191
n_{633}	632.8	1.91351
n_D	589.294	1.92086
n_d	587.562	1.92119
n_e	546.074	1.93024
n_F	486.133	1.94865
$n_{F'}$	479.991	1.95105
n_g	435.834	1.97250
n_h	404.656	1.99420
n_i	365.015	2.03607

分散式の定数 Constants of dispersion formula	
A_0	3.5126327
A_1	$-1.5301500 \times 10^{-2}$
A_2	5.3936061×10^{-2}
A_3	3.4949369×10^{-3}
A_4	$-1.7950295 \times 10^{-4}$
A_5	3.4403181×10^{-5}

部分分散 Partial dispersions	
$n_C - n_t$	0.025385
$n_d - n_C$	0.010988
$n_F - n_d$	0.027465
$n_g - n_F$	0.023850
$n_{C'} - n_t$	0.027090
$n_e - n_{C'}$	0.018335
$n_{F'} - n_e$	0.020807
$n_g - n_{F'}$	0.021456

部分分散比 Partial dispersion rates			
P_{C_t}	0.6602	$P'_{C'\_t}$	0.6921
P_{d_C}	0.2858	$P'_{d\_C'}$	0.2372
P_{e_d}	0.2354	P'_{e_d}	0.2313
P_{F_e}	0.4788	$P'_{F'\_e}$	0.5316
P_{g_F}	0.6202	$P'_{g\_F'}$	0.5482
P_{h_g}	0.5642	P'_{h_g}	0.5543
P_{i_h}	1.0888	P'_{i_h}	1.0696

異常分散性 Anomalous dispersions	
ΔP_{C_t}	0.0023
$\Delta P_{C\_A'}$	-0.0026
ΔP_{g_d}	0.0173
ΔP_{g_F}	0.0150
ΔP_{i_g}	0.1241

光弾性定数 Photoelastic Constant	
B (10^{-12}/Pa)	1.93

比重 Specific Gravity	
d	3.84

化学的性質 Chemical Properties	
D_W	1
D_A	1
T_{Blue}	1
D_{NaOH}	1
D_{STPP}	1
D_0	1
D_H	1

熱的性質 Thermal Properties	
T_g (℃)	629
T_s (℃)	678
$T_{10^{14.5}}$ (℃)	603
$T_{10^{13}}$ (℃)	623
$T_{10^{7.6}}$ (℃)	
$\alpha_{-30/+70℃}$ (10^{-7}/℃)	78
$\alpha_{100/300℃}$ (10^{-7}/℃)	96
λ [W/(m·K)]	1.190
C_P [kJ/(kg·K)]	0.637

機械的性質 Mechanical Properties	
H_K	605(6)
F_A	120
E (GPa)	115
G (GPa)	45.2
μ	0.275
σ_b (MPa)	

内部透過率 Internal Transmittance			
λ (nm)	τ 2mm	τ 5mm	τ 10mm
2500	0.967	0.919	0.844
2400	0.972	0.931	0.867
2200	0.988	0.970	0.940
2000	0.988	0.970	0.940
1800	0.996	0.991	0.981
1600	0.999	0.997	0.994
1550	0.999	0.998	0.995
1500	0.999	0.997	0.995
1400	0.999	0.999	0.998
1300	0.999	0.999	0.999
1200	0.999	0.999	0.999
1100	0.999	0.999	0.999
1060	0.999	0.999	0.999
1050	0.999	0.999	0.999
1000	0.999	0.999	0.999
950	0.999	0.999	0.999
900	0.999	0.999	0.999
850	0.999	0.999	0.999
830	0.999	0.999	0.999
800	0.999	0.999	0.999
780	0.999	0.999	0.999
750	0.999	0.999	0.998
700	0.999	0.999	0.997
650	0.999	0.998	0.995
600	0.999	0.998	0.995
550	0.999	0.997	0.994
500	0.997	0.992	0.985
480	0.996	0.989	0.979
460	0.994	0.985	0.970
440	0.991	0.977	0.955
420	0.984	0.960	0.922
400	0.964	0.912	0.831
390	0.933	0.840	0.705
380	0.850	0.666	0.443
370	0.646	0.335	0.112
360	0.197	0.017	
350	0.006		
340			
330			
320			
310			
300			
290			
280			

屈折率の温度係数 dn/dT (×10^{-6}/℃) Temperature Coefficient of Refractive Index
アッベ数の温度係数 dν/dT (×10^{-3}/℃) Temperature Coefficient of Abbe-number

	(℃)	dn/dT										dν/dT	
		n_h	n_g	$n_{F'}$	n_F	n_e	n_d	n_{633}	$n_{C'}$	n_C	n_r	ν_e	ν_d
		404.66	435.84	479.99	486.13	546.07	587.56	632.80	643.85	656.27	706.52	546.07	587.56
dn/dT & dν/dT (rel.)	-40 / -20	7.8	5.9	4.1	3.9	2.7	2.1	1.6	1.6	1.5	1.2	-1.5	-1.5
	-20 / 0	8.2	6.1	4.3	4.1	2.8	2.2	1.7	1.6	1.5	1.2	-1.6	-1.6
	0 / 20	8.6	6.4	4.5	4.3	2.9	2.3	1.8	1.7	1.6	1.2	-1.6	-1.6
	20 / 40	9.0	6.7	4.7	4.5	3.0	2.4	1.9	1.7	1.6	1.3	-1.7	-1.7
	40 / 60	9.5	7.0	4.9	4.7	3.2	2.5	2.0	1.8	1.7	1.3	-1.8	-1.8
	60 / 80	9.9	7.4	5.2	4.9	3.3	2.6	2.0	1.9	1.8	1.4	-1.9	-1.9
	80 / 100	10.3	7.7	5.4	5.1	3.5	2.7	2.1	2.0	1.9	1.5	-1.9	-1.9
	100 / 120	10.7	7.9	5.6	5.3	3.6	2.8	2.2	2.1	1.9	1.5	-2.0	-2.0
	120 / 140	11.1	8.2	5.7	5.5	3.7	2.9	2.2	2.1	2.0	1.5	-2.1	-2.1
	140 / 150	11.4	8.4	5.8	5.6	3.7	2.9	2.2	2.1	2.0	1.5	-2.1	-2.1
dn/dT & dν/dT (abs.)	-40 / -20	5.1	3.1	1.4	1.3	0.0	-0.5	-0.9	-1.0	-1.1	-1.4	-1.5	-1.5
	-20 / 0	5.9	3.8	2.0	1.8	0.5	-0.1	-0.5	-0.6	-0.7	-1.0	-1.6	-1.6
	0 / 20	6.6	4.4	2.5	2.3	0.9	0.3	-0.1	-0.2	-0.3	-0.7	-1.7	-1.7
	20 / 40	7.3	5.0	3.0	2.8	1.3	0.7	0.2	0.1	0.0	-0.4	-1.7	-1.7
	40 / 60	7.9	5.5	3.4	3.2	1.7	1.0	0.5	0.4	0.3	-0.1	-1.8	-1.8
	60 / 80	8.5	6.0	3.8	3.6	2.0	1.3	0.7	0.6	0.5	0.1	-1.9	-1.9
	80 / 100	9.1	6.4	4.2	3.9	2.3	1.5	1.0	0.8	0.7	0.3	-1.9	-1.9
	100 / 120	9.6	6.8	4.5	4.2	2.5	1.7	1.1	1.0	0.9	0.5	-2.0	-2.0
	120 / 140	10.1	7.2	4.8	4.5	2.7	1.9	1.3	1.2	1.0	0.6	-2.1	-2.1
	140 / 150	10.4	7.5	4.9	4.7	2.8	2.0	1.4	1.2	1.1	0.6	-2.1	-2.1

線膨張係数 α (×10^{-7}/℃) Coefficient of Thermal Expansion	
(℃)	α
-40 / -30	70
-30 / -20	72
-20 / -10	74
-10 / 0	76
0 / 10	77
10 / 20	78
20 / 30	79
30 / 40	80
40 / 50	81
50 / 60	81
60 / 70	81
70 / 80	82
80 / 90	82
90 / 100	83
100 / 110	83
120 / 130	84
130 / 140	85
140 / 150	86

着色度 Coloration Code	
λ80(λ70)/λ5	(405)/370
着色度 (内部透過率) Coloration of Internal Transmittance	
λτ80/λτ5	397/367

CCI Color Contribution Index	
CCI(G)	3.28
CCI(R)	3.40

冷却速度による屈折率の変化 Difference of refractive indices by cooling rate	
βC	
βd	
βF	
βg	

備考 Remarks

硝種対照表 Glass Cross Reference Index

	HOYA	SCHOTT	OHARA	HIKARI	SUMITA	CDGM
Glass_Type	FDS24-SW					
Code	921-240					

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